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JUN 13 2008

REMARKS

Examiner's "Response to Arguments" compels the following remarks:

A. Remarks pertaining to the rejection alleging anticipation.

(I) In the context of a rejection under 35 U.S.C.102(e) over Ross (U.S. Patent 6,610,770) - see paragraph 3 of the Office Action December 19, 2007- Examiner cited Bixler et al, Larson and Masuda et al as proof

"that the particle size is inherent in the nanoclay".

In response Applicants pointed to that although nano-sized particles are inherent in nanoclay, there is nothing in the "proof" to supports the notion that the clay disclosed by Ross is nano-sized. In support of their position that not all clays are nano-sized. Applicants called attention to Teppo (U.S. Patent 5,495,989) that disclosed clay particles as large as 707 microns (=707000 nanometers). Teppo was cited by Applicants solely for countering the proffered "proof".

In view of the above, Examiner's assertion that Teppo's disclosure of grinding of clay that

"does not prove that the clays used by Ross et al can be larger than applicant's claimed particle sizes" (paragraph 8 of the Office Action of May 2, 2008)

is neither understood nor contradicts Applicants' position that Ross' failure to disclose nano-sized clay renders it insufficient in the context of a rejection sounding in anticipation.

(II) Examiner points to Ross (column 11, lines 5-9) for the disclosure of grinding clay. Applicants fail to appreciate how such can be taken as disclosing nano-sized clay. There is nothing in the record to support the Examiner's notion that mere grinding results in the claimed nano-sized clay .

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(III) The term "organoclay" is defined in the dictionary -The Condensed Chemical Dictionary, Ninth Edition, Gessner G.Hawley - as

"A clay such as kaolin or montmorillonite to which organic structures have been chemically bonded; since the surfaces of the clay particles, which have a lattice-like arrangement, are negatively charged, they are capable of binding organic radicals. When this type of structure is in turn reacted with a monomer such as styrene, a complex results that is known as a polyorganosilicate graft polymer" (see the enclosed copy of page 639)

This dictionary-defined term is clearly not qualified by any parameter relating to particle size. Examiner's contrary assertion that the term "is a synonym for nanoclay" is wrong.

(IV) Examiner assertion that "the references cited in the rejection show that the particle sizes claimed by Applicants are typical and thus obvious" has been noted.

Applicants do not contest the fact that nano-sized clay is known, yet, question the meaning and present materiality of "typical" and "obvious" in the present context.

B. Remarks pertaining to the rejection alleging obviousness.

The rejection under section 103 over Ross in view of Bixler et al, Larson and Masuda has been addressed in the course of prosecution and is briefly presented below:

The claimed invention is directed to a process for improving the impact performance of a polycarbonate-containing thermoplastic composition, the process entailing mixing polycarbonate with nano-sized clay and carboxylic acid.

Ross disclosed a flame retardant polymer prepared by incorporating organoclay in a polymer. The polymer disclosed by Ross may be thermoplastic or thermosetting. Among the list of thermoplastic included are SAN and polycarbonate (column 5, line 13 et seq.)

The organoclay is (per column 5, lines 46 et seq.)

"a reaction product obtained by the intercalation and reaction of (a) one or more smectite clays;(b) one or more quaternary ammonium compounds and/or (c) one or more organic materials" (emphasis added)

Clearly, Ross' reaction product is of clay and either or both quaternary ammonium and organic materials. According to Ross there is no difference in terms of flame retardance between (i) compositions that contain organic material and (ii) corresponding compositions where quaternary ammonium replaces the organic material and (iii) corresponding compositions that contain both organic material and quaternary ammonium. Examiner is clearly wrong in construing Ross as requiring inclusion of the organic material.

Bixler et al ("Bixler") disclosed nano-sized clay in the context of a process for making paper. Larson disclosed using nano-sized clay in a process for preparing a rubber composition. Masuda disclosed nano-sized clay in the context of protective layer transfer sheet and printed product. The combined disclosures of Ross with one or more of the secondary documents falls short of describing the claimed process for improving the impact performance of a polycarbonate composition.

Applicants have argued that the Ross disclosure of flame retarding technology suggests nothing relative to impact performance and that Ross' shortcomings in the present context are not compensated by any or all the secondary references.

The present patent application has been supported by evidence showing (i) criticality of carboxylic acid in the context of the claimed invention and (ii) the difference between polycarbonate and SAN at the point of invention.

(V) Turning to the present Office Action, the Examiner points to Ross' Claim 3 for the recited "carboxylic acids" presumably to show that acid is not an optional component.

In traverse Applicants note that Ross' disclosure that acids are but optional (col. 4, line 8, col. 5, line 48 and col. 8, line 47) has no less significance as prior art than does the recitation in Claim 3. Nothing in the record or law supports the Examiner's contrary position.

As noted above the record includes evidence showing the criticality of carboxylic acid in the context of the claimed invention.

(VI) Examiner asserts that

"Polycarbonate can be one of the organic materials (sic), and is positively claimed in Claim 4 among 7 alternative polymers".

For the record: "polycarbonate" in accordance with Ross is a "synthetic polymer" and not the optional "organic material" (Ross, col. 5, line 48).

The significance of the above assertion is not completely appreciated, as the Examiner failed to explain why the recitation of "polycarbonate" in Claim 4 among seven alternative polymers has more probative value in the present context than the disclosures (col. 4, line 56) of the genus "thermoplastic and thermosetting polymers" or of the disclosure of polycarbonate and SAN (column 5, lines 28 and 31 respectively).

Declaratory experimental evidence presented in prosecution show the surprising, unexpected and critical difference between polycarbonate and SAN in the context of the claimed invention.

(VII) Examiner's criticism of the Chung declaration alleges insufficiency of the evidence. For the record it is noted that

- (i) The Declaration was submitted along with the Amendment filed June 11, 2007, and
- (ii) The next immediate Office Action (August 1, 2007) included no criticism of the declaratory evidence, and
- (iii) In a first reference to the Declaration (Office Action December 19, 2007) Examiner made no mention of insufficiency.

In view of the above it is not clear why, having missed two opportunities to do so Examiner only now questions the sufficiency of the evidence.

This issue being raised now for the first time is clearly inconsistent with the finality of the Office Action. Retraction of the finality is urged.

As to the substance of the criticism: Examiner contends that

"The evidence has to establish unexpected results for the entire claimed range, not only at one point" (text bridging pages 3 and 4 of the Action)

In support of his position Examiner cites *In re Harris* (74 USPQ2d 1951, 1955 Fed Cir 2005) and *In re Costello*, 178 USPQ 290, 292 (CCPA 1073)

It would first be noted that implicit in Examiner's contention is a clear concession that the embodiment entailing 10% acid is in fact unexpected and therefore patentable.

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It would next be noted that neither Harris nor Costello are presently relevant. The court in Harris affirmed the Board's finding of prima facie obviousness of a Ni-based alloy. The claimed components and their ranges overlapped the components and ranges of a corresponding Ni-based alloy disclosed in the prior art. Harris rebuttal evidence that "had not shown that any results were unexpected" was deemed unpersuasive.

Both the claimed invention and the cited art in Harris were directed to Ni-based alloys and none of the results brought forth as evidence were deemed unexpected.

In Costello both the claimed invention and the cited art concerned an electroless nickel bath containing identical components in overlapping ranges.

In both Harris and Costello the claimed invention and prior art were identical in terms of subject matter and overlapping in terms of components and ranges. In contrast, the present invention is directed to a process for improving impact performance while the cited art disclosed a flame retardant composition.


There is nothing in either case to support Examiner's position relative to sufficiency of evidence.

Retraction of the rejection in light of the above is urged.

Believing the above is a complete response to the outstanding Office Action and the application in condition for allowance Applicants request an early Indication to this effect.

Respectfully submitted,

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